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AUTHOR	St. John, Edward P.; Weathersby, George B.
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ABSTRACT

During the past decade, pubic and private funding agencies have invested large sums in programs designed to strengthen struggling colleges and universities. However, there is an absence of a conceptual framework for assessing the impact of these programs on funded institutions. Such a framework is described in this paper. To illustrate the need for new concepts of institutional development, the authors review previous studies of the Developing Institutions Program, Title III of the Higher Education Act of 1965. Then, based on a review of contemporary research, they apply existing theories of economic and organizational development and propose a sequential pattern of development that most institutions pass through as they develop. Finally, they suggest how existing measures might be used to diagnose an institution's current state of development. A five-page bibliography is included. (Author/LBH)

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Institutional Development In Higher Education: A Conceptual Framework For Evaluation

Edward P. St. John
George B. Weathersby

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Appendix B

The Development of Institutions of Higher Education: Theory and Assessment of Impact of Four Possible Areas of Federal Intervention

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This study of the development of colleges and universities was undertaken for the United States Office of Education, Office of Planning, Budgeting and Evaluation under contract number 300-75-0221. The project was conducted by a research team from the Harvard Graduate School of Education under the direction of George B. Weathersby. The purposes of the study were to use a merged machine-readable data base and relevant historical documents, to identify the institutional effects of funds from Title III of the Higher Education Act of 1965. Reports prepared under this contract are listed below and copies may be obtained from the USOE-OPBE (Room 4087, 400 Maryland Avenue, S.W., Washington, D.C. 20202) or the Harvard Graduate School of Education (c/o George B. Weathersby, #450 Gutman Library, Harvard University, Cambridge, Massachusetts 02138). Please include a check for the indicated amounts for orders from Harvard.

The research team consisted of Frederic Jacobs, Gregory A. Jackson, Edward P. St. John, Tyler Tingley, and George B. Weathersby. Research assistance was provided by Joan Gallos and William Trueheart. Also, we extend special thanks to our consultants, Daryl E. Carlson, James Farmer, and Wayne Kirschling, and to our secretary, Mary Sanderson.

Final Report

"The Development of Institutions of Higher Education: Theory and Assessment of Impact of Four Possible Areas of Federal Intervention" (62 pages, $2.50)

Appendices

A. Legislative History of Title III

"The Evolution of Eligibility Criteria for Title III of the Higher Education Act of 1965" by Frederic Jacobs and Tyler Tingley (61 pages, $2.50)

B. Theories and Measures of Institutional Development and Review of Previous Studies

"Institutional Development In Higher Education: A Concentual Framework For Evaluation" by Edward P. St. John and George B. Weathersby (51 pages, $2.25)

C. Descriptive Analysis of Institutional Change

"Descriptive Analysis of Institutional Change Using HEGIS, CFAE, and Title III Data Bases" by Edward P. St. John, Tyler Tingley, and Joan Gallos (94 pages, $3.50)

D. Review of Cost and Efficiency Research

"A Review of Production Function Estimation for Higher Education Institutions" by Daryl E. Carlson (122 pages, $4.25)

E. Financial Aid and Student Enrollment

"Financial Aid and Student Enrollment" by Gregory A. Jackson (10 pages, $1.50)

F. Description of Merged Data Base

"Description of Merged Data Base" by Gregory A. Jackson (3 pages, $ .50)

G. Production Function Analysis

"Production Function Analysis in Higher Education: General Methodology and Application to Four Year Black Colleges" by William Trueheart (50 pages, $2.25)

Institutional Development In Higher Education: A Conceptual Framework For Evaluation

Abstract

During the past decade, public and private funding agencies have invested large sums in programs designed to strengthen struggling colleges and universities. There is an sbsence of a conceptual framework for assessing the impact of these programs on funded institutions however. In this paper, Edward P. St. John and George B. Weathersby describe such a framework. To illustrate the need for new concepts of institutional development they review previous studies of the Developing Instititions Program, Title III of the Higher Education Act of 1965. Then, based on a review of contemporary research, the authors apply existing theories of economic and organizational development and propose a sequential pattern of development that most institutions pass through as they develop. Finally, they suggest how existing measures might be used to diagnose an institution's current state of development.

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I. INTRODUCTION

In the past, institutional development in higher education has usually referred to growth, to increased numbers of programs, students, faculty and administrators at existing institutions and to the creation of new institutions to meet ever increasing student demand. Too seldom development has referred to qualitative changes in the institutions, in their instructional activities and their management. However, prospects for institutional growth in higher education are more uncertain now than at any point in the history of higher education in the United States. As the Carnegie Foundation's recent publication More Than Survival puts it:

> For a century (1870 to 1970), higher education in the United States experienced relatively steady and certain growth. For the prior two centuries and more (1636 to 1870), growth was not always so steady but it was, by many, considered certain. Now, for the first time in our nation's history, the prospect is that growth may be both unsteady and uncertain. (Carnegie Foundation for the Advancement of Teaching, 1975, p. ix).

This shift from relatively steady and certain growth to the prospect of unsteady and uncertain future growth, precipitated by reduced rates of growth and decreased attendance rates of the traditional college-going age group, will cause most institutions to de-emphasize continued growth and adding new programs as the primary means for development and change. The Carnegie Council Foundation recommended that institutions adjust to the "decline" by developing "an overall strategy for the new condition, one which projects, realistically, several years into the future" (p. 85). They also stressed the importance of flexibility at the institutional level. Their recommendations for public policy stressed the funding of students, increased state support of private institutions, and continued federal support of university research capacity. Increased federal institutional support was not included in their recommendations.

Increased size alone, however, is not the only, nor even the most appropriate, measure of institutional development in higher education. Unfortunately, however, despite this apparent shift from a growth orien-

tation, increased enrollments and other changes in institutional activities often remains the conceptual basis for public policy and program evaluation. The principle objective of this report is to propose a framework for assessing institutional development that emphasizes non-growth oriented change through the implementation of viable instructional and management systems within existing institutions. First, three previous studies of the Developing Institutions Program Title III of the Higher Education Act of 1965, are reviewed to illustrate the need for a new conceptual basis for the evaluation of institutional development. Then, existing theories of development are drawn from the literature on organizational and economic development and are applied to higher education in the United States. Finally, existing measures of institutional change are considered in light of these theories. In sum, this paper proposes a conceptual framework for viewing institutional development in higher education that has potential applications in the evaluation of institutional finance programs as well as for public policy decisions affecting higher education.

II. THE DEVELOPING INSTITUTIONS PROGRAM

This section discusses the institutional development models used in three previous evaluations of the Developing Institutions Program (Title III of the Higher Education Act of 1965). The assumptions underpinning the development model, the methods of estimating an institution's progress or phase of development, and the relevance of the model for the evaluation of institutional development in higher education are discussed for each evaluation study. The discussion, however, does not include reference to the actual research findings or the authors' recommendations except when applicable to their discussion of institutional development.

Title III is the only federal program aimed at institutional development. It was designed to help black colleges and other struggling institutions. The following passage from Carnegie's From Isolation to Mainstream (1971) describes the plight of black colleges in the seventies:

> Few institutions of higher education today face both deeper challenges to their survival and greater opportunities for service than the colleges founded for Negroes. Segregated society was forced upon black Americans. It compelled the black community and some states to establish and maintain separate educational institutions. Today, despite their history of isolation, society now expects these institutions to meet stern competition within the broad spectrum of higher education generally. Neither the older separation nor the newer competition is easy. The new prospect, however, carries the greater hope in the long run, as it does the greater problems in the short run. It will take the best of leadership, the best of ideas, and the best of support to solve the problems and realize the hope. (p. 6)

Carnegie's discussion of the problems facing black colleges did recognize, however, that many of the problems were also faced by other struggling institutions. Specifically, they concluded that one category of problems facing black colleges were "those which are shared with white institutions of American higher education — particularly the more than 500 small, private colleges with limited resources. Corrections of deficiencies of this kind should be attempted through policies and actions applicable to all the institutions affected" (p. 9).

Title III was designed to address these deficiencies. In the ten years since the act was initially passed, more than $500 million has been appropriated for direct aid to eligible institutions. Its present annual appropriation of $110 million comprises the largest program of direct institutional aid within the federal budget.

A comparison of three previous evaluations of the Developing Institutions Program provides an interesting example of different methods of evaluating institutional development (see Table I). Title III eligibility criteria (Player, Carnell, Norden, Dickerson and Kaplan, 1971) at the time of the three studies discussed, were a combination of academic and financial measures for minimum and maximum eligibility. Each study took a different evaluation approach. Howard (1967) evaluated the effectiveness of the selection criteria using quantitative measures of academic quality. Miller, Gruin and Clarke (1970) measured the attitudes of administrators and faculty as a menas of evaluating program effectiveness. Hodgkinson and Schenkel (1974) used a combination of financial, structural, and process measures to develop a phased model for developing institutions. The results of the three studies varied according to the research method, and measures of development used in the study.

Lawrence Howard used quantitative measures to evaluate qualitative development and to evaluate the selection criteria used by the Title III program staff during the first year of operation. It was based on the assumptions that "as Title III is now administered, and indeed as many of the public and private programs are operated, quantitative measures are used to make qualitative judgments" (p. 82). In fact, at the time, most of the criteria for the Title III program were quantitative.

After several attempts to rank institutional quality testing the reliability using different variables, and after correcting for the size bias inherent in the quantitative measures, the five most useful ratios Howard computed for each institution: "faculty/student, students to

Table I A Comparison of 3 Previous Title III Evaluations

Report	Factors Evaluated or Suggested	Measures of Development	Results
Program Title III Criteria Evaluations	Minimum & Maximum Eligibility Criteria by Institutional Type (proposed Criteria)	FTE Student Enrollment % Faculty with Doctorates % Faculty with Masters Average Professional Salary Average Instructor Salary Total Current Income FTE Student Expenditure Total Vol. in Library	Minimum and Maximum Eligibility Defined
Howard (1967)	Academic Quality as selection criteria (Compared Non-Funded and Funded Institutions)	Quantitative Measures of Quality: Faculty/Student; Ph.D.'s to Student; Library Volumes to Enrollment; Income to Enrollment; First Enrollment to Bachelor Degree Awarded	Selections made without awareness of Institutional (high or low) quality
Miller, Gruin and Clark (1970)	Program Effectiveness Effectiveness by Institutional quality (Selected Institutions)	- Measures of Effectiveness based on Faculty & Administrator Attitudes about Program - Also contrasted effectiveness measures with quantitative measures of Institutional quality	- Administrators and Faculty in "selected" programs ten to view programs as succes - Effectiveness not correlat to Institutional quality
Hodgkinson & Schenkel (1974)	Development according to developmental stage (Model suggested for W. W. Rostow in Stages of Economic Growth, 1960 (Institutional Survey & Cast Studies)	Measures for Development Model: Leadership Dynamism & Efficiency Financial Stability Range of Programs & Activities offered students Cost-Effectiveness Sense of Rule & Long-Range Direction Student Involvement and Outreach Faculty-Administrative Relations Community Relations (Case Studies Analyzed for Development Model)	- Derived a three stage Development Model - Suggested Funding Cycle for Institutional Institutions based on Developme Phase

Ph.D.'s, library volumes to enrollment, income to enrollment, and first time enrollment to bachelors degrees awarded" (p. 92). He concluded these five variables "represent the beginnings of criterion indicators which relate quantitative data to institutional quality" (p. 92). His institutional quality ranking, however, did not prove to be consistent with the actual selection criteria used in the operation of the Title III program. As Howard put it in his report:

> In short, the neat distinction between established and developing colleges, which seemed so logical when the empirical listing was used, literally comes apart when ratios, weighting, and multi-dimensional analysis are applied. While our statistical procedures are still at an elementary level, they already clearly point up that awards are now being made without knowledge of how a given applicant or cooperating institutions fits in the universe of higher education (p. 97).

Even though the official criteria used to determine minimum and maximum institutional eligibility were quantitative, the actual funding decisions made by the Title III staff, as Howard's findings indicated, were not based entirely on these critieria. Howard concluded that the statistical approach he used "to distinguish developing institutions could be useful for the administration of Title III, in spite of the many hurdles which have not yet been surmounted" (p. 101).

The underlying assumption about institutional development used by Lawrence Howard in his study of the developing institutions program was that qualitative development, that is, the development of academic quality of colleges and universities, can be determined with quantitative measures. Howard's discussion of colleges and universities as organizations, it should be pointed out, did not rely entirely on quantitative or statistical considerations. For instance, in one part of his report, he provides a rather lengthy discussion about the relationship between colleges and their external environments, describing colleges and universities as "open systems" (pp. 115-122). He does rest many of his recommendations on quantitative concerns, however. For example, he suggests "colleges, to be viable economically in the decades ahead, will require

a minimum enrollment, perhaps from 1,500 to 2,000" (p. 132).

Miller, Gruin, and Clark (1970) emphasized program development and evaluation as an important aspect of evaluating institutional development. They studied the effectiveness of Title III funded programs at 'selected' funded institutions. Rather than selecting institutions on a random basis, they selected institutions with programs that were either examplary or unique.

Their evaluation was placed in a general context that placed considerable importance on the development of institutional administration as well. As they put it: "As institutions grow and mature, the administrative support necessary to lead and sustain them grows and matures" (p. 34). And, conversely, that "the inadequate development of administrative support in many developing institutions constitutes one of their most serious handicaps" (p. 34). Thus, although their report advocates program evaluation as the primary means of evaluating the effectiveness of the Developing Institutions Program, they do this within a context that stresses the importance of the development of campus administrative functions as well. Their discussion of the development process went as follows:

> The differentiation of administrative and quasi-administrative tasks and their distribution among a growing number of specialists in American colleges and universities can be viewed historically, and it can be viewed functionally. As recently as the time of the Civil War....college administration was largely a one-man affair, with the president performing all the tasks and teaching as well. The order in which specialized administrative personnel appeared varied from one campus to another, but they typically involved first a separate librarian, then a registrar....As institutions grew in size and complexity, each of these functions developed subspecializations as well as the need for increasing numbers of clerical, secretarial, and technical assistance.
>
> Viewed functionally rather than historically, the development of administrative specialization can be described as progressing through a series of stages which provide initially for the productive activity for which the organization was established (teaching in the case of most colleges) and subsequently move to develop supporting structures to assist the productive enterprise through de-

pendable management, structures for the maintenance and smooth running of the system, and eventually structures for dealing effectively with the world outside the institution itself through better systems for procurement, disposal, and institutional relations. (p. 35)

Acknowledging that Title III allocations relate not only to the question of what programs to support, but also to which institutions to fund, the authors compared the questionnaire responses of faculty and administrators at each institution to the institution's quality ranking. Variables included in their quality rating included "student-faculty ratio, percentage of faculty with doctorates, education and general expense per student, number of library volumes per student, and average test scores (CEEB or ACT) of entering freshmen" (p. 62). They developed five equal categories of quality in the number of institutions based on responses from individuals at 37 institutions. Their findings showed little relationship between institutional quality ranked by the quantitative measures and faculty and administrator attitudes about program success. Although their findings are conclusive about this relationship, they did point to a "dilemma for those administering Title III funds, when they make their decisions about which Title III institutions to support. Institutions with greater resources are liable to have greater administrative capability to make effective use of Title III funds and hence Title III support may often be more critical for them and of greater relative value and impact" (p. 67).

They were cautious about using their quality rankings either to make quality judgments about the institutions they grouped or to make judgments about institutions that should or should not be funded. In evaluating which institutions should receive funds, they suggested that there might be a reverse relationship between institutional quality and program success: "that is, in the institutions where the need was greatest, Title III programs were sometimes seen as more important" (p. 82).

Their decision to move away from a concern with the impact of Title III on institutions as a whole, to a concern about the impact of speci-

fic programs and was based on at least two assumptions. First, "it is generally accepted in American higher education that the measures used to differentiate quality levels of institutions are crude and inadequate" (p. 83). Second, "the crucial factors of leadership and institutional spirit are not easily quantifiable; although they are susceptible to judgment and assessment" (p. 87). These considerations led them to conclude that the "process of institutional development might be described as a movement toward a 'critical mass' of imaginative, cooperating but self-sufficient individuals who complement one another and protect the institution should any one of them leave" (p. 89).

Hodgkinson and Schenkel (1974) used a staged model of institutional development in their evaluation of the impact of Title III. The stages of institutional development proposed by Hodgkinson and Schenken are analogous to the stages of growth in national economics proposed by W. W. Rostow (1960) in The Stages of Economic Development: Traditional Society, Preconditions for Take-Off, and Drive to Maturity. Hodgkinson and Schenkel suggest that the first three stages are most applicable to the study of the Title III program. Accordingly, they define the three stages as follows:

> 1. The institutions at the traditional society stage . . . if judged worthy of support is a likely candidate for a full cycle of institutional support under Title III.
>
> 2. The institutions at the pre-conditions for take-off stage should at least be potentially ready for special Title III funds.
>
> 3. The institution at the take-off stage is clearly the ideal recipient for special Title III grants since it has already initiated some special programs of its own. (p. 122-23).

They also suggest there are similarities between their stages and the hierarchy of human needs developed by A. Maslow:

> Our three categories of development bear some relationship to the theory of need emergence developed by Maslow who claimed that "basic" psychological needs for food, shelter, clothing must be satisfied first, then one moves to needs for security and identity--

> being loved and needed--then to the higher needs that involve values, stimulation and risk taking. We hypothesize that institutions must move from stage one to stage two in our typology before they can contemplate moving to the "take-off" stage, for reasons very similar to Maslow's (p. 191).

Their evaluation used both a survey of institutions receiving Title III funds (325 respondents out of 638 institutions) between 1965 and 1974 and institutional case studies (for 41 institutions). The case studies were used to test the developmental model. The case study institutions were broken into three groups that corresponded with the three stages outlined above: "high range institutions, those which . . . are well on their way to becoming self-sustaining and effective institutions; medium range, those which are developing more gradually and somewhat unevenly and whose future is somewhat less certain; and low range, those. . . hampered by very basic problems in their daily operations" (p. 191). The purpose of the analysis was to suggest the institutional characteristics of colleges and universities at each of the three stages. The measures of viability used to compare the campuses were: leadership dynamism and efficiency; financial stability; range of programs and activities offered students; cost-effectiveness; sense of role and long-range direction; student demand for involvement, and/or outreach efforts by school to uninvolved students; faculty-administrative relations; community relations (pp. 196-97). Accordingly, they suggest rating institutions on these variables in a way to get "a reasonably accurate picture of a developing institution's stage of development" (p. 206), and that the "allocation process can be improved once institutions have been categorized in this manner" (p. 207). They suggested the following in the use of their model in the Title III allocation process:

> Institutions in the "low range" of institutional development can not be considered on cost-effectiveness terms, as they are usually casting about for a sense of institutional mission, which is ordinarily necessary before institutions can make cost-effective decisions. It takes more support to move an institution from "low" to "medium" than from "medium" to "high," and a greater risk must be taken. Given the kinds of institutional needs we have described

for institutions at the low viability level, larger amounts of Title III funds should be directed toward the needs of these institutions. However, the low-level institutions should be accountable for implementing the programs that make the best sense, given their level of development.

> Several institutions were clearly ready to move into more specialized and stimulating programs. The concept of a developing institution should be broad enough to permit a campus to develop some really fresh and vital new program thrusts, . . . providing models for emulation by other institutions not yet at the take-off point (pp. 220-21).

With respect to the potential success of a Title III program in an institution irrespective of institutional stage, they suggest "leadership potential is probably the most important single characteristic in distinguishing the successful Title III programs from the less successful ones" (p. 220). These findings echo the conclusions of the Miller study.

In contrast to the other evaluation studies reviewed here, Hodgkinson and Schenkel place a much greater emphasis on measuring the stage of development of an institution than on evaluation of programs (Miller), or on quantitative measure of quantitative development (Howard). In the opinion of the Title III program staff, the Hodgkinson study may have been subject to biases resulting from the historical trends of the late sixties and it failed to address a variety of questions about the actual Title III programs. Yet the same staff report that criticizes the Hodgkinson report for its limitations suggests that it "does tell us some things about the movement of institutions along the line of general and total institutional development" and that it is in this area that the Hodgkinson study was the most productive (Title III Program Staff, p. 8).

There are advantages and limitations to the views of institutional development used in each of these studies. Howard's study emphasizes the quantification of the eligibility criteria used in the Title III program and does not address questions related to the management of the Title III program or the process of development at the institutional level.

In contrast, Miller et.al. emphasized the quality of the selected Title III programs, which they found to be unrelated to institutional quality as measured by quantitative means. Hodgkinson and Schenkel's study suggested a developmental view that applies at the institutional level, but did not offer much insight about the types of programs that should be funded or how they should be evaluated.

Of the three studies, Hodgkinson and Schenkel's comes the closest to approximating a developmental view of institutional development. They decided on the case study approach after their constitutional survey had failed to provide any interesting findings about development. The three-phased model they propose relates to the issue of survival in the sense that the more advanced institutions are surviving better than less advanced institutions, but it does not suggest the types of changes in institutional activities and management that can help it improve its chances of survival. For instance, it does not provide a developmental view of how shifts in educational technologies can influence the changes of institutional survival; or of when structural changes can influence the chances of an institution surviving. Their evaluation does suggest, however, that developmental theories can provide a conceptual basis for the evaluation of institutional finance programs.

III. ALTERNATIVE THEORIES OF INSTITUTIONAL DEVELOPMENT

Despite a sizeable literature on the administration and governance of colleges and universities, there have been few systematic treatments of their development patterns. There have been numerous campus histories and case studies of the development patterns in single institutions or systems (see Beach, 1975, for a bibliography of institutional histories) and even some systematic treatments of different historical periods, but there have been few attempts to articulate the stages most institutions have passed through in their development. There have only been two attempts to generalize about institutional development patterns in higher education. Both have focused on a specific group of institutions and have not necessarily been applicable beyond the institutional cohorts studied.

Heron and Frieson (1973) derived from the literature on organizations a general stage theory (birth, youth, productive, mature) to study the historical development of community colleges in the Province of Alberta, Canada. Their model emphasizes the increasing complexity of institutions as they age and increase in size. Hodgkinson and Schenkel (Hodgkinson, and Schenkel, 1974; and Hodgkinson, 1974) used Rostow's stages of economic growth and Maslow's theory of individual need emergence as the basis of an institutional stage model (traditional, preconditions for take-off, take-off, drive to maturity, high mass consumption) for developing institutions in the United States. In contrast to the model proposed by Heron and Frierson, this latter model is not age or size related. It emphasizes the necessity for an institution to meet basic survival needs before qualitative changes in institutional programs can occur. Although neither study emphasizes both quantitative and qualitative developments, they both suggest that the developmental approach is potentially useful in institutional planning and public policy.

This section proposes a theoretical framework for viewing the development of colleges and universities. It emphasizes three aspects of development: development of institutional activities; development of ad-

ministrative structures; and qualitative changes in institutional processes that influence both academic and management activities. Specifically, this framework accounts for:

(1) Transitions in Institutional Activities: Institutional activities in colleges and universities traditionally include instruction, research, and/or public service and, in addition, include maintenance activities such as student services (advising, health services, financial aid, etc.) and staff development (for faculty and administrators). In this framework, development of institutional activities is considered at the broadest possible level. The framework considers broadly based technological advances available to traditional higher educational institutions as well as new educational forms. An institution's decisions about the use of new technologies can influence its efficiency relative to other institutions as well as its chances for survival.

(2) Administrative Decision Structures: This term refers to the formal organization of an institution's planning, policy making, and policy implementation processes. This framework uses a phased theory for the development of college administrative structures that is related to increased size, age and successfully resolving predictable institutional crisis. The more advanced institutional phases according to this model are not qualitatively better or more efficient than less advanced phases. Instead, the phased model is used to suggest the most appropriate and efficient types of organizational structures and management information systems for institutions in each phase.

(3) Qualitative Changes in Institutional Processes: In this framework qualitative changes in an institution's activities and decision-making process--the way the structure operates and the degree of participant involvement in it--are not directly related to an institution's size or age. In other words, the phase of development of an institution's administrative decision structure does not imply qualitative changes in the decision-making process or in institutional programs. Implementation of the most efficient organizational structure and management information

system can positively influence the way the system operates, however. In this framework, a stage theory of organizational development is used to suggest qualitative transitions in institutional administrative processes.

This multi-level view of institutional development in higher education is derived largely from contemporary developments in organization theory. Although developmental perspective on organizational growth and the evolution of management practices has a long history, dating back to Max Weber in the modern era (Bendix, 1960), more recent developments in organization theory suggest that a multi-level perspective on development is important.

External influences, or institution-environment interaction, provide a basis for the discussion of technological developments. Baldridge (1972) has advanced a political systems perspective or organization change that moves "from an exclusive emphasis on internal features of the organization to a wider view that takes in the influences of the environment" (p. 9). Kaufman (1975), in his evolutionary view of the natural history of human organizations, has suggested that environmental influences are the single most important influence on the change process in organization. For higher education, these views suggest that advances in the education industry--shifts in the technology of educational practice and management--can outdate a campus's programs and make shifts in its programs and management necessary for survival in the educational market place. This view is in fact supported by Baldridge's (1971) study of the changes implemented at New York University after City University of New York, the city's public multi-campus university, instituted an open-admissions policy. As a result of this study, Baldridge developed his political systems perspective.

The study of large-scale changes in the growth and death of formal organizations--the basis of the developmental view of administrative decision structures here--is relatively new. Katz and Kahn (1966) argue that studying structural and system level features, in addition to stud-

ying changing individual roles and attitudes, is important to the practice of organizational change. In their book The Social Psychology of Organizations, they suggest one of the first stage theories for the structural development of organizations. They maintain that systems pass through three structural stages in their development: primitive system, stable organization, and elaboration of structure (pp. 77-83). Although more elaborate development models have been proposed since Katz and Kahn (see for example, Greiner, 1972; Scott, 1971) presented their system, their macro level view of organization certainly has been an important dimension to the systematic treatment of the development and change processes in human organizations. This level of analysis is especially applicable to higher education where rapid increases in attendance in recent decades have created numerous structural changes.

Theories about qualitative changes in the internal process or climate of organizations have a slightly longer history (see for example, McGregor, 1960). These theorists argue that the internal climate of an organization affects the behavior of organization members and vice versa. Recent theorists have argued that more democratic approaches to management are essential and necessary (Bennis, 1966); that more open organizational climates can enhance productivity (Likert, 1976); and that behavioral interventions can improve work environment, (Argyris, 1970; French and Bell, 1973). In addition, in recent years, a developmental or staged approach to qualitative changes in the work environment have been developed as well (Lippet and Schmidt, 1976; Torbert, 1974/5). Concerns about changes in the internal environment are especially important in higher education where the liberal arts tradition has long placed an emphasis on individual development.

The three development theories compared in Table II are applied to these three aspects of development. Table II compares the proposed stages, the assumptions underlying each theory, the characteristics observed, and the specific aspects of development or change each author addresses. First, Rostow's stages of economic growth provide a frame-

	Rostow & Schmidt[1] (1960)	Greiner[2] (1972)	Torbert[3] (1974/5)
Stages Designation	Traditional Society Preconditions for Take-Off Take-Off Maturity High Mass Consumption	Creativity Direction Delegation Coordination Collaboration	Shared Fantasies Investments Determinations Experiments Pre-Defined Productivity Openly Chosen Structure Foundational Community Liberating Symbols & Disciplines
Assumptions	Historical Sequences of National Economic Growth Economic Growth Related to Technological Advancement in National Industries	Analogous to Stages of Individual Development Internal Organizational History Determines Future	Analogous to Erickson's Theory of Individual Development Qualitative Stages of Organizational Development not Related to Size
Characteristics	Rise in Rate of Productive Investment Development of Substantial Manufacturing Sector(s) Political, Social and Institutional Framework which Exploits Expansion	(Observation of Businesses) Age Size Stages of Evolution Stages of Revolution Growth Rate of Industry	(Educational Program) Derived from Author's Experience as Program Administrator Descriptive Characteristics of Each Phase Based on Observed Incidents
Implications For	Shifts in Technology and Production Political, Social and Institutional Change Public Investments Policies for National Industries	Organization Practices Management Focus Organization Structure Top Mangement Style Control System Management Reward System	Policies & Change Strategies for Organizational Members and Interventionists Helps Individuals Move Toward Greater Self-Direction and Greater Collaboration

[1]Rostow, W. W., The Stages of Economic Growth: A Non-Communist Manifesto, Cambridge, Eng., Cambridge University Press, 1960.

[2]Greiner, L. E., "Evolution and Revolution as Organizations Grow," Harvard Business Review 50 (1972) 37-46.

[3]Torbert, W. R., "Pre-Bureaucratic and Post-Bureaucratic Stages of Organizational Development," Interpersonal Dynamics, 5 (1974-5) 1-25.

work for considering the technological transformation currently taking place in higher education. This theory places higher education in the context of its relationship to social, political, and economic changes at the national level. Second, Greiner's stage theory for the growth of business organizations provides a framework for viewing the staged development of college and university decision structures and the types of interventions that can facilitate this development. Finally, Torbert's stages of organizational development provides a framework for viewing qualitative developments of institutions and programs. These theories are used here because they have the broadest application to higher education when compared to other developmental theories in each of the three categories.

Institutional Activities

Rostow's theory offers a context from which to view technological transitions in the higher education 'industry' as a whole, and to consider their implications for institutions. In Rostow's model, the transition of national industries, especially agriculture, is critical to national economic development. In a Traditional Society, the majority of the populace works in agriculture. As a society advances through the various stages, an increasingly smaller percentage of the population is employed in a more productive, technologically advanced agricultural industry and other manufacturing sectors develop. During the transition period, the Pre-Conditions for Take-Off stage, changes are both economic and political, with the political changes often being the decisive feature. During this period, "new types of enterprising men come forward--in the private economy, in government or both-- willing to mobilize savings to take risks in pursuit of profit and modernization" (Rostow, 1960, pp. 6-7).

The Take-Off is a period of industrial revolution characterized by a rise in the rate of productive investment, the development of one or more substantial manufacturing sectors, and the creation of a political, social, and institutional framework that supports growth. The Drive to

Maturity is a lengthy period, lasting roughly sixty years, during which the national economy develops. During the age of High Mass-Consumption, the real income of the population increases, there is a shift in population from rural to urban areas, and the proportion of the population in skilled and office jobs increases. Writing in 1960, Rostow was able to offer little speculation about the stage beyond high mass-consumption, although he suggested that the U.S. was entering a new stage. The shifts now taking place in the education sector may be a critical part of this transition.

Rostow's model can be applied to a transformation now taking place in higher education in the United States and other developed countries (especially England and Western Europe). The Carnegie Commission (1972) has suggested that higher education is moving through its first technological transformation in modern times; a technical revolution in educational practice. Ashby (1974), a member of the Commission, has described four major transformations in education practice. The first three--the shift of educational responsibility from the extended family to the church or synagogue, the adoption of the written word, and the advent of printing--took place before the modern era and before the first industrial take-off described by Rostow. The printed word has been an integral part of higher education since before the first take-off. Ashby describes the present era in education as follows:

> We are now confronted by a fourth revolution in education. During this century, for the first time since the invention of printing, new technologies are being adopted in teaching which will certainly transform the whole process of education, though what the transformation will be is still a matter of speculation (p. 34).

Ashby leaves little doubt, however, of the importance and benefits of this transition:

> Advances in the technology of education, despite possible dangers, is enabling mass higher education to become a reality. But education in technology and the implications of technological advances is essential if higher education is to deal effectively with reality (p. 32).

A new institution in Ashby's own country, Great Britain, was the first national institution that incorporated a totally new design in higher education. In five years, between 1969 and 1974, a new higher education system was developed, the British Open University, with a capacity to reach 75,000 people through the use of television and other technologies, including new course material and teaching methods (Perry, 1975). Although a single advancement of similar magnitude has not yet been created in the United States, there are a number of signs that a transition is occurring in higher education in this country. Recent innovations in the United States--such as the University of Mid America, a regional university with a televised curriculum located in the mid-west, and the New York Regents External Degree Program, a nationwide examination degree-granting program--are adding new options to an already complex and accessible higher educational system.

The new technologies have had a significant impact on educational practice in higher education in the United States and have been part of a larger transofrmation that is extending higher education beyond the campus (for example, see Vermilye, 1972, 1975). They have played an important role in transforming campus-based education by facilitating new alternatives to traditional classroom methods, including the use of new technologies--video tapes, television, individualized learning methods, etc.--and have been important in increasing off-campus learning options at home and in industry (see for example, Cavert, 1975). In addition, the use of new technologies is now evident in the management of higher education, especially in the development of information systems that are useful in management of colleges and universities in different developmental phases (Balderston, 1974).

The combination of changes in instructional and management activities can potentially contribute to both more technologically advanced and more efficient educational systems. Unfortunately, the limited success of different financial measures in higher education makes the efficiency of new practices difficult to evaluate. Balderston (1974)

suggests that there is "no convenient and operational test of financial viability to apply directly to the observable accounting picture of an institution (in higher education)" (1974, p. 180). Howard Bowen has made attempts to evaluate the efficiency of traditional and nontraditional approaches to liberal education (Bowen and Douglas, 1971) and external degree programs using heavy initial technological investment (Bowen, 1973) and Weathersby and Henault (1976) have attempted to assess the coast-effectiveness of experiential learning programs, but in general, studies of efficiency of new and old methods have been limited.

In addition to presenting a framework for understanding the relationship between changes in the higher education industry and the larger society, Rostow's model can be used to describe stages in the gradual transformation now taking place in higher education. They are:

Traditional system: Colleges and universities utilize traditional classroom methods in instruction and management and reach a limited portion of the population. Alternatives to traditional instructional modes and campus-based instruction are limited or do not exist.

Pre-conditions for take-off: Individuals and groups in education, government, and industry emerge with strong interest in using technology in education. New technologies for instruction and management are developed in other sectors and are available to higher education. New delivery systems, including non-campus based degree programs are experimented with.

Take-off: The take-off stage is a relatively brief period during which a small number of institutions begin to transform their activities. New capital is available to support experiments with new instructional and management methods; new technologies are available (or adaptable from other sectors to education), and political, social and economic support for the new educational systems emerges (including consumer interest in the new programs). A greater diversity of degree

options begin to emerge in traditional and nontraditional settings.

Drive to maturity: The drive to maturity is a sustained period, lasting several decades, during which a variety of new educational options are developed in both traditional and nontraditional (in the work place, home, etc.) settings. A diverse higher educational system gradually emerges with both traditional and nontraditional programs available for a diverse student clientele. An increasingly smaller portion of staff are in direct teaching and an infrastructure begins to develop.

High mass consumption: During this period there would be a highly developed educational system with a variety of life-long learning options for work, leisure, and personal enrichment. There would also be an emphasis on the quality of programs as well as their usefulness.

According to this model higher education in the United States is currently in a period of transition, moving from the take-off stage to the drive to maturity. The past decade has witnessed considerable advancement in the technologies available to higher education and innovations in the types of delivery systems available to students. New educational technologies are available and are being tested. Public broadcasting in this country is already a very diversified system, with the capacity to reach eighty per cent of the population (Witherspoon, 1975). Computer technology has also advanced to the point where it can significantly enhance the learning and research process in higher education (Levien, 1972; Rockart and Scott Morton, 1975). With respect to the technological advances available to higher education, Rockart and Scott Morton have concluded:

> Technology is continuing to change, and it will continue to have an impact on the way we conduct ourselves in higher education. Indeed certain technologies, computer and television in particular, have the potential to have a major impact on the learning process and the structure of the university. (p. 273)

Although available and in many instances tested, the implementation of new technologies has not proceeded as rapidly as it might. One of the problems, according to Rockart and Scott Morton, is financial:

> Our analysis suggests that despite this potential, the focus and level of spending on many technologically based projects has not been appropriate. We have been in an era, which seems to be ending, of spending without thinking--some believe we are entering an era of thinking without spending. We need to be on a carefully chosen middle ground. (p.273)

They argue that although many environmental factors support further implementation of the new technologies in higher education, there are many internal constraints, especially an aging professoriate already threatened with loss of employment opportunities due to declining enrollments.

This gradual transition is not entirely technological, however, and even the implementation of new hardwares, like television and computers, requires the development of softwares, like learning packages and course material. Perry (1975), Vice President of the British Open University, suggests that the United States has "spent too much on sophisticated hardware and not nearly enough on sophisticated software, namely on producing high quality teaching material" (p. 15). Echoing these same concerns about educational television Witherspoon (1975) has observed that "we tend not to pay enough attention to the requirements of the program, the software, which is all too often the hard part and, in every case, the most important part" (p. 286).

In spite of the gap between educational hardwares and new softwares, more diverse delivery systems are emerging. Houle (1973) and Gould (1973) have documented the movement toward the nontraditional in higher education: many traditional campuses have developed new methods of extending their programs off campus and new non-campus-based programs, like the Regents External Degree Program, have emerged. Along this line there is a growing literature heralding the movement toward the nontraditional, open learning, and external degree networks as the wave of the future. In addition, the increased connection between work and education is a particularly evident trend (O'Toole, 1973; Mushkin, 1973).

In sum, we are entering a period of gradual change. The traditional system of higher education is firmly established although the combination of new technologies and new delivery systems are helping institutions

and creating a more diverse network. As of yet there is little hard evidence that these changes will make institutions implementing these reforms more efficient, although the promise of increased efficiency is ever present.

For institutions these trends have diverse implications. The present context is a highly political one and change may well come through the political process. States are taking a more active role in higher education policy than in the past (Glenny, 1974/5); faculty unionism is increasingly evident (Garbarino, 1972, 1975); there are internal constraints on change (Rockart and Scott Morton, 1975); and there are increasing pressures on administration in a time of declining enrollments (Carnegie Foundation, 1975; Mayhew, 1974). Most innovations are political in one way or another, however, as the history of the British Open University indicates (Perry, 1975). In combination the technological and the political changes create a complex set of forces facing institutions that may help them to create a more diverse system.

Decision Structures

Greiner's theory provides a framework for viewing the staged development of college and university decision structures. Greiner suggests a developmental model with five predictable phases through which organizations pass in their development: creativity, direction, delegation, coordination, and collaboration. According to Greiner, there is a crisis between each evolutionary phase: a leadership crisis between the creativity and direction phases; an autonomy crisis between direction and delegation; a control crisis between delegation and coordination; a red tape crisis between coordination and collaboration. He also suggests that organizations require a period of evolution (prolonged periods of growth) when in the midst of any phase, and a revolution (a period of substantial turmoil in organizational life) when passing between phases.

His theory was derived from the observation of business organizations and his suggestions relate primarily to their management and decision systems. It is his position "that the future of the organization

may be determined less by outside forces than it is by the organization's history" (1972, p. 38). He adapts his perspective from the legacies of European psychologists who suggest "individual behavior is determined primarily by previous events and experience" (9P. 38). He bases his model on numerous case studies in which he observed changes in the following characteristics: age, size, previous stages of evolution, previous stages of revolution, and growth rate of the industry.

These characteristics have been the subject of research in higher education and appear to be interrelated. An institution's age has been shown to be related to increased structural complexity (Heron and Friesen, 1973) and is considered to be related to an institution's ability to adapt to changes in the growth rate (Carnegie Foundation, 1975). Increased size has been shown to be related to increased structural complexity and increased faculty autonomy (Baldridge, Curtis, Ecker, and Riley, 1973); to greater program flexibility and the availability of funds to start new programs (Holdaway, Newberry, Hickson, and Heron, 1975); and to shifts in presidents' image of their role as leaders (Cohen and March, 1974). Institutional case studies have shown that sudden shifts in the growth rate, the result of unexpected external events, can cause an organizational crisis (Baldridge, 1971); that institutional conflict can result from sustained periods of growth (Smelser, 1974); and that once rapid structural changes or responses are made to a crisis situation, there appears to be relatively long periods during which the new systems develop and mature (McConnell and Mortimer, 1970). These findings suggest that, in general, the variables Greiner considered important in determining evolutionary and revolutionary stages are, in fact, interrelated factors that change as colleges and universities develop.

In Greiner's view, an organization's history has important implications for its future, especially in the recognition of the limited range of solutions to growth related crises at different points in an organization's history. In his view, a revolutionary stage can only be ended by certain specific solutions. There are many implications of

Greiner's theory for higher education. Changes in organizational phase may be characterized by transformations in the structure of the decision making process. The institutional decision making schema shown in Figure 1 can be used as a basis to describe the evolution of decision structures that accompnay each new phase. The three rectangles shown in Figure 1 represent the three decision-relevant roles of administration: formulation of policy options, actual decisions and implementation. These decision roles can be assumed by one individual, or they can be differentiated in a very complex pattern of delegated authority and responsibility, or they can be shared in a loosely structured, fluid, collegial structure, or they can be reorganized weekly - but these three roles must be included in some manner in the organization. Adapting Greiner's model, the sequential development of institutional administrative decision structures can be described as follows:

(1) Phase 1 organizations (creative) combine the policy formulation decision and implementation roles and informally share these roles among the small group of colleagues. While individuals may have functional specialities they are not formally structured. Communication is direct, personal, informal and frequent. The conception-decision-action-evaluation-reconception process is constant, unstructured, occurring over lunch, in the car on the way to a meeting, in the storefront or wherever. For phase 1 organizations, the decision structure is very simple and is shown in Figure 2.

(2) Phase 2 organizations (direction) are functionally organized, communication is formal and structured, authority is usually hierarchical and the decision structure looks like Figure 3. With the operational information filtered through functional managers, top policy makers become increasingly remote and detached from daily activities and increasingly dependent upon implementors for both data and policy recommendations. It is understandable how a crisis of autonomy results from this structure.

(3) Phase 3 organizations (delegation) deal with the autonomy

Figure 1

Sequence of Institutional Decision Making

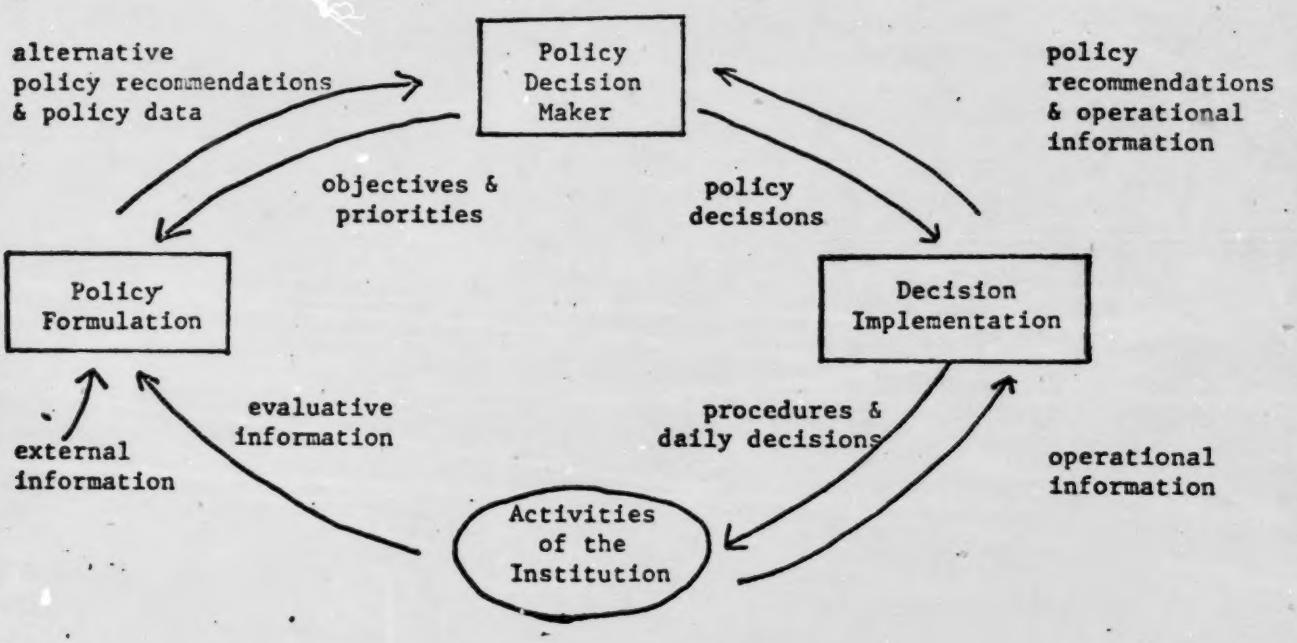
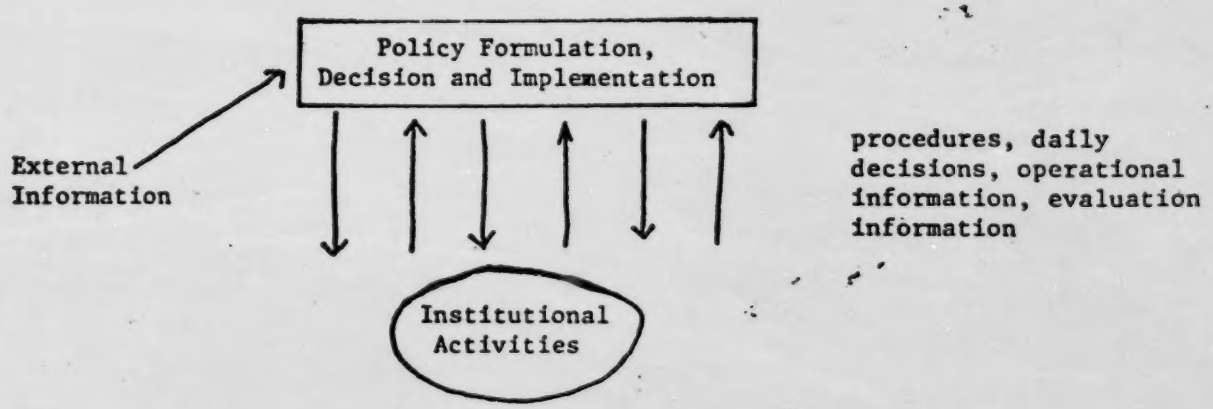


Figure 2

Phase 1 Decision Structure


Policy Formulation, Decision and Implementation
External Information
procedures, daily decisions, operational information, evaluation information
Institutional Activities

Figures 1 through 6 (Source: Weathersby, 1975)

Figure 3

Phase 2 Decision Structure

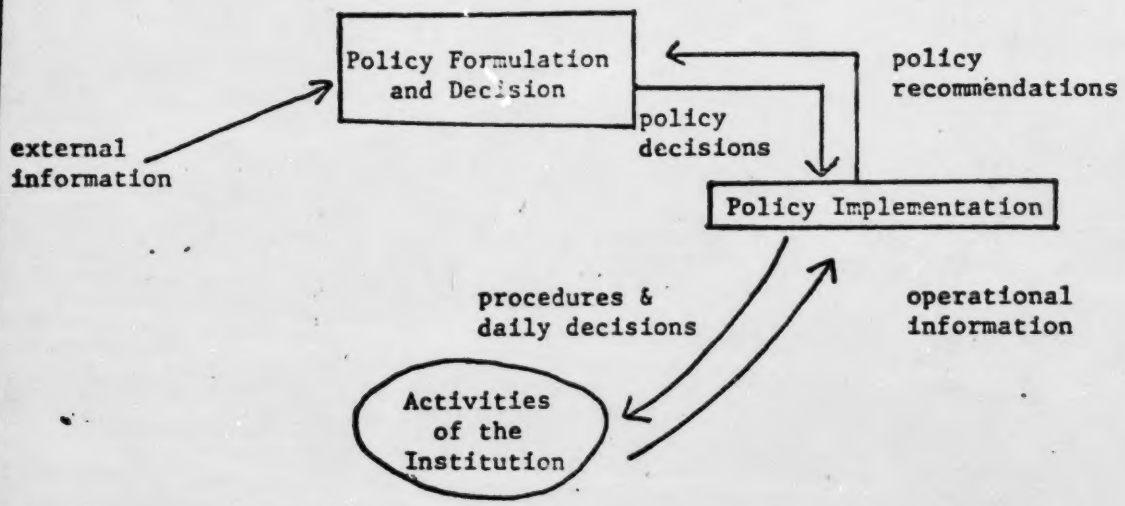
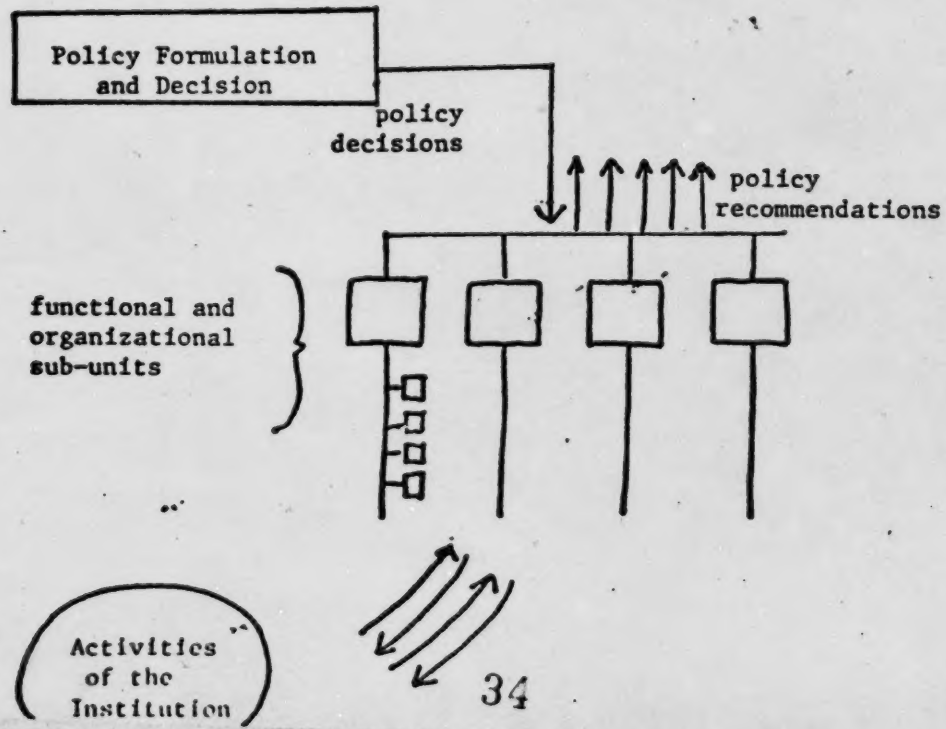


Figure 4

Phase 3 Decision Structure



crisis by differentiating the policy implementation structure both horizontally (more specialists) and vertically (more decentralization of authority and responsibility). The resulting decision structure is shown in Figure 4. This graphically visible fragmentation of implementation suggests why the crisis of control usually results from this organization phase.

(4) Phase 4 organizations (coordination) attempt to cut through the mass of overlapping and conflicting functions, procedures, activities and policy recommendations by consolidating implementation units (more powerful vice presidents or provosts) and by establishing a separate evaluation, planning and/or analysis function (see Figure 5). To be effective, this separate policy formulation function must obtain evaluative information about the activities of the institution and about external realities and must interact with the ultimate deciders (president, board of trustees, state legislature or governor or whomever) to make objectives and priorities explicit (at least in-house) and to propose and evaluate alternatives. This process of evaluation-analysis of alternatives-policy recommendations-decision implementation-evaluation becomes increasingly formalized, complex, time consuming, and expensive. Institutions and particularly state systems are becoming large bureaucracies heading almost inexorably toward procedural strangulation: the crisis of red tape.

(5) Phase 5 organizations (collaboration) merge the policy formulation and implementation roles into one that is shared by teams of multifunctional specialists organized around particular problem focus. Top management is involved primarily in general direction setting, assignment of individuals to multi-disciplinary teams, resource acquisition, coordination through team leader conferences, and evaluative feedback (see Figure 6). Some research groups, consulting firms, and professional schools seem to be organized this way.

A more descriptive elaboration of these phases as they apply to colleges and universities will help illustrate its applicability to most

Figure 5

Phase 4 Decision Structure

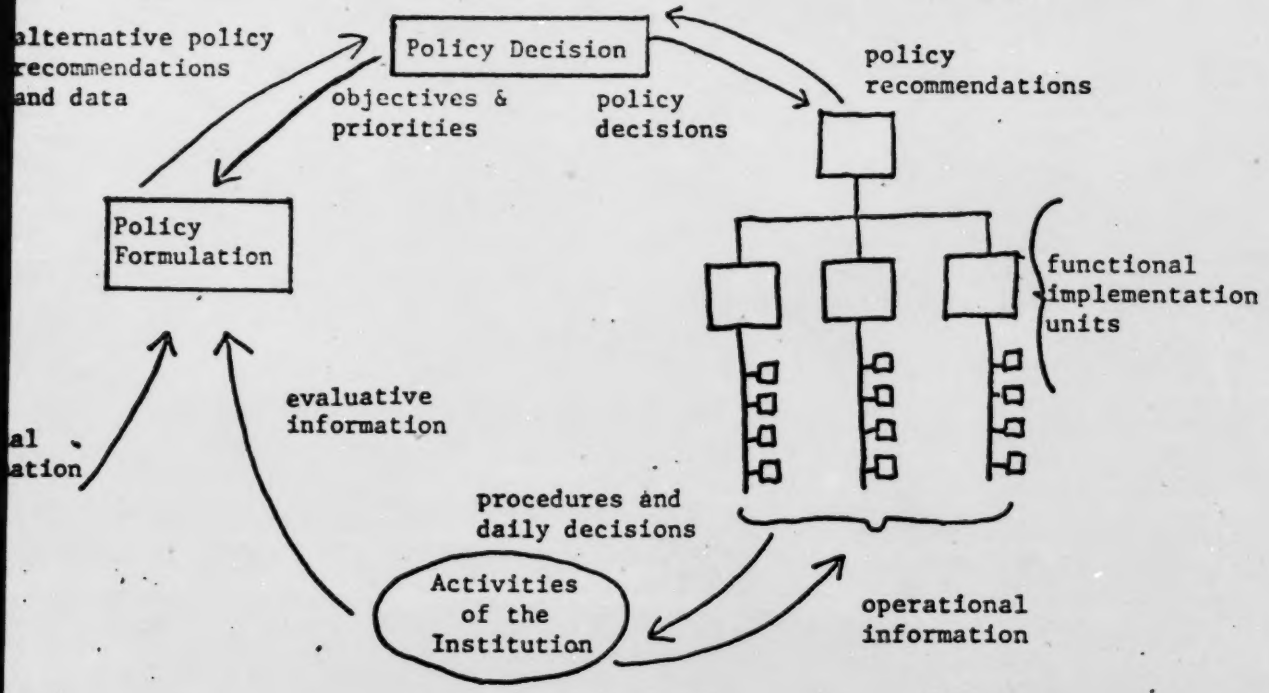
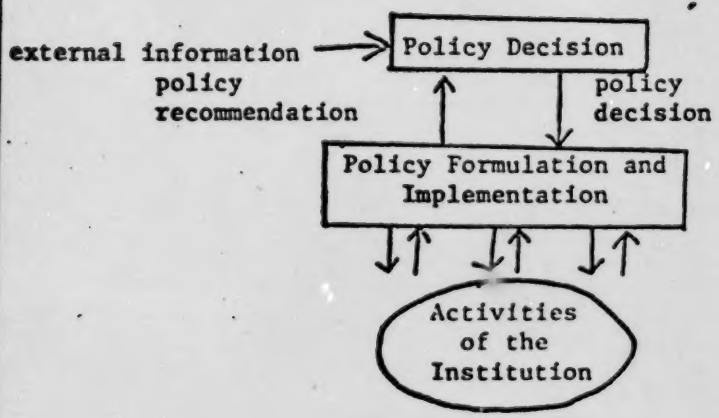


Figure 6

Phase 5 Decision Structure



higher educational institutions. Although little data exists, our judgment is that most colleges and universities are in phase 3 and a few are in phases 2 and 4. Phase 1 is possible in a few instances, however, especially for young institutions still struggling to develop academic programs and student markets. And phase 5 remains a possibility.

The phase 1 (creativity) organization is a newly created academic program or campus. One administrator, usually the president, and perhaps one or two key assistants, work with the trustees to hire a faculty, develop academic programs and secure a student clientele. As long as it remains in the initial phase the college's decision structure will remain at this state (described earlier). Policy decisions are made by the president and/or the trustees probably in consultation or collaboration with faculty and students. Historically most United States colleges were in this phase before the mid-eighteen hundreds. The failure rate is greater during this phase than any other as evidenced by the fact that over 600 colleges opened and closed before 1860 (Tewksbury, 1932). Contemporary institutions in the creativity phase are relatively new, small, and probably, poor.

If an institution grows beyond this initial phase, a leadership crisis will occur. As the number of students and faculty increases more administration is needed--first a registrar, then a dean of students, department chairmen, etc.--and the campus begins to take on a new form. A more complex decision structure (phase 2) and information system will be needed. Historically a few colleges began to enter a more directed organizational phase where the top administrator exerted strong leadership in the mid-1800s (Brubacher and Rudy, 1958); by the early 1900s more elaborate administrations had developed at numerous institutions across the country (Veysey, 1965). Today, some of the younger institutions may be at this crisis point, having grown beyond the stage where an informal loosely structured decision process is effective. These institutions can benefit from implementing a more defined decision structure and from external financial support in the development of new administrative services

and information systems.

If a campus continues to grow, perhaps through the addition of new programs, then an autonomy crisis will eventually result. With increased size the distance between administration and the institution's activities increases and, as a result, old decision methods are no longer effective. The centralization of decisions--for example, about academic programs, faculty hiring and promotion, or student requirements--can result in student and faculty discontent. The solution is to develop a more delegated structure, with formally organized colleges and departments. To emerge from the autonomy crisis a new decision structure (phase 3) will be needed. This provides a solution to the problems resulting from the growth and separation between policy makers and institutional activities. The new structure allows decision makers to be closer to the action and makes it more likely for the actors (faculty and students) to have input into or be involved in policy formulation and implementation processes.

According to Greiner, a control crisis eventually evolves if the institution continues to grow successfully in the delegation phase; top executives sense that they are losing control over a highly diversified field operation (p. 43). In higher education, the control crisis is most likely to result when undergraduate colleges and graduate schools on a single campus have gotten out of control or when new campuses have been added to an existing single campus system, and the need for a new coordinated system emerges. Coordinated multi-campus systems are the primary example of organizations in the coordination phase. Multi-campus universities have a relatively long history--for example, Florida formed a multi-campus system in 1905--but the development of coordinated multi-campus systems as a distinctive and relatively sophisticated organization phase is a relatively recent phenomon. In most cases these institutions have developed since World War II, as the percentage of the population attending colleges and universities increased dramatically. Lee and Bowen (1971) describe two general patterns for the development of

multi-campus systems: Flagship systems have resulted from the extension of an established campus into a system either by creation or absorption; and consolidated systems resulted from the aggregation of several campuses under a central administration and governing board.

Kerr considers the creation of multi-campus systems one of the three most significant organizational changes in higher education in the past quarter century, along with the creation of statewide governing mechanisms and student involvement in the governing mechanisms (see Clark Kerr's introduction to Lee and Bowen, 1971). By 1971, nearly a fifth of the nation's universities and colleges were part of multi-campus systems and forty percent of the student population attend these institutions.

Greiner suggests that a red tape crisis results from success in the coordination phase. In this revolutionary period, both line managers, in this case deans and department chairmen, and staff criticize the bureaucratic paper system that has evolved. The student and faculty discontent with bureaucratic systems in the late sixties and early seventies and the resulting public disillusionment with the higher education system is probably the clearest sign of a red tape crisis in higher education.

In higher education, a few coordinated systems seem to be emphasizing new collaborative approaches to program change, although a distinctively different organization phase has not yet emerged. Lee and Bowen (1975) have recently observed that state systems are moving in a new direction:

> In the past five years, system-wide academic activity has increased significantly in three related areas: nontraditional education, multi-campus programs (including regional coordination), and innovative and experimental programs, Enrollment and resource constraints have been prime motivating factors for only one of these, multi-campus programs. But all three have the potential to increase system effectiveness in a period of fiscal stringency and to enhance learning for the same (or a lower) cost (p. 139).

If it exists at all, however, the collaboration phase is just now emerging. Implementation of collaborative systems would suggest significant

changes in the administrative decision structures: decentralization of policy implementation within systems and perhaps centralization of policy formulation at the state or system level.

An application of Greiner's phase theory to higher education does not suggest that more advanced phases are qualitatively better or more efficient than less advanced phases. But in a time of decreasing enrollments and increasing politicalization, the developmental perspective this theory provides is useful. It suggests that institutional managers and state and federal policy makers making decisions directly affecting institutions should assess the history and developmental phase of their institutions when making decisions about the appropriate organizational structure and management information systems.

In the future continued institutional growth is less likely and more efficient management of institutional resources is critical. Greiner has offered some explicit and fairly simple guidelines to managers of growing organizations: know where you are in the developmental sequence; recognize the limited range of solutions; and realize the solutions breed new problems. These same guidelines are important to the manager of organizations where growth is not likely, because their choices about decision structures and management inquiring systems are perhaps more critical.

Qualitative Changes

Torbert's theory of qualitative stages of organizational development provides a perspective from which to view qualitative changes in higher education institutions and programs. His stages--shared fantasies, investment, determinations, experiments, predefined productivity, openly chosen structure, foundational community, liberating symbols and disciplines and a stage uncharted in the author's experience--are analogous to Erickson's stages of individual development. (See Table II for a description of all nine stages). They depict qualitative changes in the work climate, or spirit, of an organization or program.

His stages are not focused on changes that occur as size and age

change because "changes in size and age do not necessarily generate changes in quality" (p. 1). According to Torbert most theories of organization assume bureaucracy is an advanced and rational form of organizing. In contrast, his theory places "bureaucracy as a middle stage of organizational development representing a lower form of rationality than three qualitatively distinct later stages" (p. 2). The predefined productivity stage, most often experienced as bureaucracy, is the predominant organizational form in society, and openly chosen structure, the next stage in his organizational scheme, is possible the next stage for many organizations. Although his model does not take into account the growth related institutional transformations covered by Greiner's theory, it does suggest a broad conceptual framework for organizing qualitative changes in a variety of organizational settings.

This general concept of qualitative differences in organizing strategies is applicable to institutions of all sizes and to subunits within larger institutions. The theory is derived from his experience as Director of the Yale University Upward Bound program and is applicable to administration at this level, but it is a perspective that is useful in analyzing decisions made at the institutional level as well. For instance, Torbert reached the following conclusion in his analysis of Yale's investment policy decision.

> An interesting feature of the new Yale investment policy is that it uses a principle of the 'openly chosen structure' quality of organizing--the standard of evaluating the effects of its own behavior on the environment--both as a justification for the policy itself and as a standard for the management of companies in which it holds stock. The Yale policy suggests a more symmetrical, less subordinate relation to sources of funding (characteristic "i" of 'Openly Chosen Structure') (p. 25).

The purpose of Torbert's paper was to introduce "a new vision of what organizational growth can mean" (p. 23). In this sense "growth" means qualitative change rather than increased size. The later three stages in this theory--openly chosen structure, foundational community, and liberating symbols and disciplines--are relatively uncommon in most

TABLE III STAGES OF ORGANIZATION DEVELOPMENT

CHARACTERISTICS OF THE STAGES OF ORGANIZATION DEVELOPMENT

Fantasies
(a) Dreams, fantasies about future, initial visions;
(b) informal conversations with friends, work associates;
(c) diffuse collaboration - discussing or working with others on occasional, related projects to explore shared interests;
(d) episodic exploration of varied parts of the social environment to see how they relate to fantasies, where opportunities exist, what potential consequences of action would be.

Investments
(a) Organizers make definite commitment of enterprise;
(b) 'parent' institutions make financial, structural, spiritual commitments to nurture;
(c) early relationship-building among potential leaders, members, clients, advisers;
(d) leadership style negotiated;
(e) issues arise about the validity, reliability, and depth of the various personal and institutional commitments.

Determinations
(a) Specific goals, clients, staff, members determined (hiring, admissions);
(b) recognizable physical territory delineated;
(c) first common tasks and time commitments;
(d) psychological contracts between parties and organization defined implicitly or explicitly;
(e) persistence-unity exhibited in face of perceived privation or threat.

Experiments
Alternative legal, governing, administrative, physical, production, communication, planning, scheduling, celebratory, and/or interpersonal structures-processes practiced (modeled, role-played), tested in operation and reformed.

Predefined productivity
(a) Focus on doing the predefined task;
(b) viability of product = single criterion of success;
(c) standards and structures taken for granted (often formalized, institutionalized);
(d) roles stabilized, job descriptions written;
(e) effort to quantify results based on defined standards;
(f) reality conceived of as dichotomous and competitive: success-failure, leader-follower, legitimate-illegitimate, work-play, reasonable-emotional.

Openly chosen structure *
(a) Shared continual reflection about larger (wider, deeper, more long-term, more abstract) purposes of organization;
(b) development of open interpersonal process, with disclosure, support, and confrontation on value-stylistic-emotional issues;

The reader should recall that few organizations achieve the final three stages. Therefore, some of the following characteristics may seem unfamiliar. The characteristics of 'Openly chosen structure' will be illustrated further in this paper.

TABLE III (cont'd)

(c) evaluation of effects of own behavior on others in organization and formative research on effects of organization on environment ('social accounting'); i.e., determining whether abstract purposes are being realized in practice;
(d) direct facing and resolution of paradoxes: freedom versus control, expert versus participatory decision-making, etc.;
(e) creative, trans-conventional solutions to conflicts;
(f) organizational his-story becomes my-story; *
(g) deliberately chosen structure with commitment to it, over time, the structure unique in the experience of the participants or among 'similar' organizations;
(h) primary emphasis on horizontal rather than vertical role differentiation;
(i) development of symmetrical rather than subordinate relation with 'parent' organization;
(j) gaining of distinctive public repute based on the quality of collective action within the organization.

(Crisis of transition to spiritual ground)

VII: Foundational community
(a) Regular, personal, shared research on relations among spiritual, theoretical, and behavioral qualities of experience;
(b) transcendence of pre-existing cultural categories and appreciation of the continuous interplay of opposites: action-research, sex-politics, past-future, symbolic-diabolic, etc.;
(c) organization survives a challenge or crisis during which its existing structure fails; shared purpose (spirit) revealed as sustaining;
(d) new experiences of time: interplay of creative timeliness, timeless re-enactments of archetypal patterns, and time-bound personal needs and situational requirements; spirit as illuminating and meaning the past and future; history as myth (where myth means ultimate truth).

VIII. Liberating disciplines
(a) Lowering of membership boundary between organization and environment, inclusive rather than exclusive, given commitment by aspirants to self-transformation;
(b) tasks deliberately ironic to elucidate hidden relationships among task, process, and purpose; incomprehensible (unpleasant, undoable) without reference to their expression of and inspiration from organizational processes and purposes;
(c) commitment by 'leaders' to premeditated structural evolution over time;
(d) 'leaders' use all authority granted to exercise psychosocial jiu-jitsu, leading to increased sense of their authority among other members;
(e) openness (vulnerability) of 'leaders' to challenge regarding their authenticity.

IX. (Uncharted in author's experience)

* I am indebted to Judy Putzel for this formulation. It refers to the process whereby members come to identify with the unique history of this particular organization.

Source: Torbert (1974/5)

of our institutions. These stages place a much greater emphasis on the impact of the organization structure and of decisions that are made on the members of organizational programs than is the case with most other organizational theories. Although most organizations reach stages required to attain predefined productivity, or bureaucracy, few ever advance beyond this stage. The rest of this section, and most of Torbert's paper, speculates about how this difficult transition from predefined productivity to openly chosen structure might occur and what this new stage might look like.

This perspective on qualitative changes in organizations provides context for viewing the suggestions of other theorists who argue that the organizational climate affects the behavior of its members and vice-versa. The openly chosen structure stage is comparable to the stage of organization Bennis and Slater (1968) have called beyond bureaucracy. Torbert's stage theory, when combined with the phased view discussed earlier, can provide a framework for selecting the most appropriate strategy for improving qualitatively the decision-making process on campuses of different sizes and in different phases of structural development.

Concerns about the quality of campus decision making have long been important in higher education. For over half a century the involvement of faculty in the decision process of their institutions has been considered an important, if not critical issue, in the United States; and at present it is the norm rather than the exception for colleges and universities to involve faculty in the decision making process (Jencks and Reisman, 1968; McConnell and Mortimer, 1970). In the past decade the involvement of students has become a critical concern and many institutions are experimenting with alternative methods of involving students in institutional decision processes (Helsabeck, 1973; Hodgkinson, 1971; McGrath, 1970; and St. John and Regan, 1973). Organization development techniques have also been introduced to campuses as a method of improving both faculty and student involvement. Keeton (1971) has

suggested strategies for improving the quality of the university environment by involving administrators, faculty and students in mutual decision making and collaborative work arrangements. Others have documented the use of organizational design (McKelvey and Kilman, 1975), change agents (Jenks, 1973) to improve the quality of institutional decisions. This suggests that no matter what organizational phase (1 to 5 on Greiner's model) of development a college or university is, that qualitative transitions in the administration and decision making at the program and campus levels are possible. The literature on organizations, including Greiner's discussion of his theory, suggest that qualitative changes are not related to age or size related developments.

The qualitative factors that distinguish an organization in the openly chosen structure stage from the predefined productivity state can be considered measures of viability for institutions and programs. Accordingly, institutions that examine their relations with external communities and organizations are more advanced. Although it is not necessary according to Torbert's description, in our opinion institutions that involve faculty and students as well as administrators in policy formulation and implementation decisions are also more advanced. Increased student and faculty participation in these decisions can add to their commitment to the institution. And when an institution's students and faculty feel committed to new programs because of their involvement in it, the program may have a greater impact than a program that has a limited investment on the part of those individuals it is supposed to benefit. Unfortunately, there are not many models per se as to how more open systems can be achieved in higher education. Keeton (1971), who suggests that "sharing authority can contribute generally to effectiveness" (p. 148), has offered the following ways of achieving these ends:

> In dividing the labor, create units capable of coherent purpose and high morale . . .
>
> At each level of operation (overall institution . . . colleges or institutes or departments, etc.) work for the advantages of division of labor . . .

> Know the specific facts as to how your own campus' constituencies view the problems, priorities, and environments.
>
> Enforce shared authority. Lip service to democratic practice will not do . . .
>
> Sharing authority is ideally a matter of each person respecting the concerns of the others as part of his own concerns . . .
>
> Learn to deal with emotional talk and action to gain understanding and cooperation rather than to escalate conflict and destruction.
>
> Improve the patterns of accountability on campus and between the campus and between the campus and the public . . .
>
> Enlist and develop leaders capable of being effective through sharing and dispension of authority and power . . . (pp. 148-152)

Another aspect of the openly chosen structure stage of organization is an emphasis on interpersonal relations and the development of the individual. In higher education researchers have long paid attention to the maturation and intellectual growth of student populations and many institutions consider these factors in developing programs. The designing of educational programs flexible enough to meet the educational needs of individuals of different ages and stages of development has been a more recent concern (Chickering, 1975). And there appears to be an increasing concern about these same issues as they apply to faculty (Lindquist and Noonan, 1975) and administrators (Weathersby, 1975). Consideration of the implications of institutional plans for the development of individuals in the institutions - whether through educational programs for students or staff development for faculty and administrators - may be an increasingly important measure of institutional and program viability in the future.

When evaluating an institution's plan or proposal, however, there are no easy or foolproof methods of evaluating the openness of an institution's administration, the degree of faculty and student commitment to institutional programs or the contribution of programs to individual development. Judgments by experts in the field and opinion polls are perhaps the best, and definitely the most common, method of evaluating quality or excellence in higher education.

IV MEASURES OF DEVELOPMENT

The multi-leveled view of institutional development presented here can suggest ways of using existing measures of institutional change to identify different phases of the development process. Table IV suggests the types of measures that can be used to identify the three levels of development discussed in the previous sections.

The first set of measures relates to the technological development of the institution. Technological development used in its broadest sense refers to the relative degree of sophistication and efficiency of the means of conducting institutional activities and includes both traditional and nontraditional teaching, student service, and management activities. The first dimension relates to observable characteristics of the institution, including such quantitative measures as enrollment, number of faculty, faculty with doctorates, faculty salaries, and library volumes. The technological characteristics have been further broken down into two categories, hardward and software. Software includes development in instructional programs -- basic skills programs, individualized instruction programs, work experience programs, and assessment of prior experience. Hardware, in contrast, refers to the use of equipment (i.e., television, video, and computers) in the instructional delivery process. A second characteristic of technological development refers to measures of efficiency for institution and institutional programs.

Since technological change is a gradual process in the higher education industry as a whole, this level of analysis has few short term implications for institutions. Table V illustrates one conceptualization of stages of technological change. It is seldom that an institution will transform its activities -- its methods of educating students -- in one year, or even five or ten years. Instead technological change comes from the creation of new institutions, like the British Open University of the University of Mid America, or through the addition of new activities at established institutions. The stage of development of an institution's activities can be easily determined by examining the technology they now

TABLE IV MEASURES OF INSTITUTIONAL DEVELOPMENT IN POSTSECONDARY EDUCATION

DEVELOPMENTAL CONCEPTS	DIMENSIONS	MEASURES
1. Technological (Institutional characteristics, and viability)	a) Technological Characteristics 1) Software	- Institutional Characteristics, Capital Investment - Types of programs and services, proportion of spending on software
	2) Hardware	- Types of technologies, proportions of instruction budget spent on technological aids
	b) Program Efficiency	- Labor productivity, cost-effectiveness (efficient surface)
2. Macro Level Structural Development (Developmental phase of institutions based on internal history and observable characteristics)	a) Organizational Phase	- Match organizational pattern and developmental phase - Management responses to institutional crises (decision analysis)
	b) Management Efficiency	- Complexity measures, differentiation of staff, % overhead
3. Qualitative Change (Assessment of openness of the decision process and the impact of the program on students)	a) Systems Openness	- Match of organizational stage with diagnosis of organizational climate (case history) - Determination of degree of participation and decision centricity
	b) Program Impact	- Individual change, individual commitment to institution and program, comparison of student and institutional goals

use: most institutions are at the traditional stage; some institutions have started to transform their activities and are entering the electro-media stage; and a few new institutions have established programs in completely new ways, as institutions in the electro-media stage. Long range planning should include consideration of gradual changes in institutional activities.

The phase of structural development of the institution and the corresponding appropriateness of the management system can be identified by a second set of measures. The identification of phase can best be assessed either through case histories or matching organizational pattern with developmental phase. In addition, the types of crises an institution faces can be used to determine the phase of development. Greiner suggests that there is a consistent crises between each phase. Determination of phase can therefore be based on consideration of the types of managerial crises that predominate: leadership, control, autonomy, or red tape. Considering the types of crises facing an institution can have numerous implications for institutional management as well because a predominance of one type of crisis suggests the decision structures and information system an institution is using are no longer the most appropriate.

In this paper we have suggested a sequential pattern of development for institutional decision structures and information systems based on a determination of organizational phase. The predominance of one type of conflict or crisis can be the clearest sign that structural change is needed. Once system level problems have been diagnosed, the specific solutions, in the form of changes in inquiring and management systems, are relatively flexible and can anticipate the next logical step in the developmental sequence and recognize the uniqueness of the individual campus.

The qualitative development of the institution and its programs, that is the openness of the system and its impact on individuals in the

TABLE V STAGES OF TECHNOLOGICAL DEVELOPMENT

Stage	Focus	Example of Technology
Traditional	Cognitive and Affective	Lecture, books, writing paper
Electro-Media	Cognitive	Self-paced learning CAI (Computer Aided Instruction) Programmed learning - automatic testing TV with or without feedback
Cybernetic	Learning how to learn	Data bases Methods of inquiry Theory/practice principles

institution, can be identified by a third set of measures. Subjective judgments by students and professionals (opinion surveys) and measures of individual change can be used to evaluate program impact while case histories, decision analysis, and analysis of the governance process (participation in policy making and implementation) can be used to evaluate openness. Qualitative changes are the most difficult of the three levels of development to suggest objective measures that are useful in evaluation, but they are important nonetheless.

V. CONCLUSIONS

Since higher education in the United States is facing the "greatest overall and longrun rate of decline in all of its growth patterns in all of its history" (Carnegie Foundation, 1975, p.1), new concepts of development are needed for institutional managers and policymakers. In this paper we have explored some new concepts of development by proposing a framework that emphasizes qualitative changes in educational and management practices. The framework emphasized three aspects of institutional change from a developmental perspective; a perspective that views changes as an incremental and possibly sequential process. Specifically, this view emphasizes enhancement of: the institution's technologies, including changes in educational practice as well as integrating new devices where needed; the development of administrative decision structures that are efficient given an institution's internal history; and the qualitative changes in institutional practices, both administrative and academic, that increase an institution's impact and the likelihood of attaining its qualitative goals.

We have also explored how existing measures of institutional change can be used to assess developmental change. Since this framework is a new application of existing social science theories to higher education which has not been substantiated, there are limits to its applicability at the present time. The framework is not proposed in order to suggest specific step-by-step solutions to institutional management or public finance problems. Instead it is intended to stimulate the thinking of those institutional managers, policy analysts, and policymakers concerned about developmental change. Hopefully, they can analyze alternatives and design their research in light of these concepts. Basic research that explores the developmental change of higher education institutions is also needed however. In particular, there is an absence of in-depth studies of individual institutions and of groups of institutions funded in public and private programs designed to enhance the development of struggling institutions. New concepts of developmental change in institutions that are not necessarily dependent on ever increasing numbers of students are, nevertheless, necessary.

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